AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An appliance comprising:

(a) a converter capable of using a substantially carbon-free hydrogen;

(b) a hydrogen storage container including a nanostructured material capable of storing the substantially carbon-free hydrogen in a condensed state, the container including:

(i) a carbon-based nanostructured material and

(ii) a metal capable of acting as both a seed for the formation of the nanostructured material and a facilitator for promoting the storage in the condensed state of the substantially carbon-free gaseous hydrogen provided to the storage container, the metal having a particle size less than about 100 nanometers;

(c) a charger capable of facilitating the storage in the condensed state of a substantially carbon-free gaseous hydrogen provided to the storage container; and

(d) a discharger for liberating the condensed substantially carbon-free hydrogen from the nanostructured material of the hydrogen storage container so as to be available for use in the converter.

2. (Original) The appliance according to Claim 1, further including a controller for regulating the cooperation of the converter, the charger, and the discharger.

3. (Original) The appliance according to Claim 1, further including an exhaust.

4. (Original) The appliance according to Claim 1, wherein the converter is for propulsion.

5. (Original) The appliance according to Claim 4, wherein the propulsion converter is combustion-based.

6. (Original) The appliance according to Claim 5, wherein the combustion-based propulsion converter is an internal combustion engine.

7. (Original) The appliance according to Claim 5, wherein the combustion-based propulsion converter is a turbine.

8. (Original) The appliance according to Claim 4, wherein the propulsion converter is chemical-based.

9. (Original) The appliance according to Claim 8, wherein the chemical-based propulsion converter is a fuel cell-based system.

10. (Original) The appliance according to Claim 1, wherein the converter is a power generation system.

11. (Original) The appliance according to Claim 10, wherein the power generation system is a combustion-based system.

12. (Original) The appliance according to Claim 11, wherein the combustion-based system is a turbine.

13. (Original) The appliance according to Claim 10, wherein the power generation system is a fuel cell-based system.

14. (Original) The appliance according to Claim 13, wherein the fuel cell-based system is a hydrogen-oxygen electrical generator.

15. (Original) The appliance according to Claim 1, wherein the converter is a thermal management system.

16. (Original) The appliance according to Claim 15, wherein the thermal management system is a heating system.

17. (Original) The appliance according to Claim 16, wherein the heating system is a combustion-based system.

18. (Original) The appliance according to Claim 16, wherein the heating system is a hydrogen-oxygen electrical generator.

19. (Original) The appliance according to Claim 15, wherein the thermal management system is a cooling system.

20. (Original) The appliance according to Claim 1, further including a hydrogen gas supply communicating with the charger.

21. (Original) The appliance according to Claim 1, wherein the charger further includes a conditioner for facilitating hydrogen charging of the nanostructured material.

22. (Original) The appliance according to Claim 21, wherein the conditioner is a cooler.

23. (Original) The appliance according to Claim 21, wherein the conditioner is a pressurizer.

24. (Original) The appliance according to Claim 1, wherein the discharger includes a restoring mechanism capable of controllably releasing condensed hydrogen to provide gaseous hydrogen to the converter.

25. (Original) The appliance according to Claim 24, wherein the restoring mechanism includes a heating mechanism.

26. (Currently Amended) The appliance according to Claim 25, wherein the heating mechanism ~~provinces~~ provides heat by any one of chemical heating, resistive

heating, radio frequency heating, microwave heating, electrical heating, electromagnetic heating, and any combination thereof.

27. (Original) The appliance according to Claim 24, wherein the restoring mechanism further includes a subcontroller.

28. (Original) The appliance according to Claim 24, wherein the restoring mechanism further include at least one sensor.

29. (Original) The appliance according to Claim 28, wherein the at least one sensor includes any one of a temperature sensor, a pressure sensor, a partial pressure sensor, chemical sensor, and a flow sensor.

30-52. (Withdrawn)

53. (Canceled)

54-84. (Withdrawn)

85. (New) The appliance according to Claim 1, wherein the metal comprises an organometallic material.

86. (New) The appliance according to Claim 85, wherein the organometallic material comprises a multi-metallic material, ethyl magnesium, magnesium ethoxide, and an organometallic complex, or a combination thereof.

87. (New) The appliance according Claim 86, wherein the multi-metallic material comprises magnesium aluminum isopropoxide.

88. (New) The appliance according to Claim 86, wherein the organometallic complex comprises nickel B-ketonenolate.